

STUDIES ON THE SYSTEMATICS AND DISTRIBUTION OF CRABS IN ASSAM¹

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(With six text-figures)

The family Potamonidae (Decapoda: Crustacea) of Assam has *Potamon* (*Acanthotelphusa*) *woodmasoni* Rathbun of the genus *Potamon* and five species of the genus *Paratelphusa* namely *Paratelphusa* (*Barytelphusa*) *edentula* Alcock, *P.* (*Barytelphusa*) *guerini* var. *planata* A.M. Edw., *P.* (*Barytelphusa*) *harpx* Alcock, *P.* (*Paratelphusa*) *sinensis* Milne-Edw., *P.* (*Paratelphusa*) *spinigera* Woodmason of family Potamonidae = *T.*(h.) *elphusidae* are recorded from different districts of Assam.

INTRODUCTION

One of the most important aspects of fishery biology is the fishery of edible crustaceans. Among the crustacean fishery, crab fishery has gained considerable attention particularly the biology and fishery of crabs that are of economic importance. Crabs are caught round the year. However, the peak catch season shows a definite seasonal trend in commercially important crab landing areas. On the North Eastern region of India in general and Assam in particular, the peak season is generally from October to February.

There is little information on the freshwater crabs of Assam. In view of the regional importance of the fishery of these crabs the present study was undertaken.

MATERIAL AND METHODS

The species of crabs belonging to family Potamonidae (Telphusidae) of Assam were collected regularly from different regions of the districts of the state, and were obtained as

well from fishermen's catch. These were brought to the laboratory, cleaned and preserved in 8-10% formaldehyde solution.

RESULTS

The collection comprises of six species:

***Paratelphusa* (*Barytelphusa*) *edentula* Alcock.**
(Fig. 1).

Collection localities:

Goalpara district: Boko, 1 ♂, TL. 25 mm;
Kamrup district: Maligaon, 2 ♂, TL. 28 mm;
Sibsagar district: Panbesa near Sibsagar, 1 ♂
2 ♀, TL. 26-31 mm; Lakhimpur district:
Corella beel, 3 ♂, TL. 15-25 mm; Dibrugarh
district: Dibrugarh, 4 ♂, TL. 20-33 mm.

Diagnostic features:

The cervical groove is broad and deep running to the lateral epibranchial tooth. The epigastric is broad and blunt. The outer half of the post orbital portion of the epigastric crest is sharp and inner portion is blunt. The legs are strong and shorter than smaller cheliped. In the chelate leg, one pair of blunt tooth like projection in the antero-lateral portion of ischium and merus and one large and two blunt teeth on carpus.

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Paratelphusa (Barytelphusa) guerini var.
planata A.M.-Edw.

(Fig. 2).

Collection localities: Kamrup district: Tihu, 3 ♂, 1 ♀, TL. 68-79 mm; Darrang district: Mora-Dhansiri, 1 ♂, TL. 74 mm; Karbi Anglong district: R. Rabinala, 1 ♂, TL. 73 mm; Garo Hills: Garo Hill, 2 ♂, TL. 25-65 mm.

Diagnostic features:

The cervical groove is broad and deep, running towards, but not reaching the site of the lateral-epibranchial tooth. The epigastric and post orbital crests form a bold ridge on either side of the mesogastric furrow. In the chelate leg, the pits are linearly arranged on the fingers and there are some squami-form tubercles on the upper surface of the palm.

Maximum size 74 mm.

Paratelphusa (Barytelphusa) harpax
Alcock (Fig. 3).

Collection localities: Sibsagar district: Puro-nipukhuri beel near Gaurisagar, 2 ♂, TL. 15-35 mm; Lakhimpur district: North Lakhimpur, 2 ♂, TL. 15-36 mm; Dibrugarh district: Proper Dibrugarh near Assam Medical College, 2 ♀, TL. 55 mm.

Diagnostic features:

The cervical groove is deep and so the region appears more convex. In the orbital border of the carapace, 3-4 distinct teeth are present and the rest of the area in the form of a serrated structure. The sixth segment of the abdomen is longer and its sides are more concave. The postero-lateral borders of the carapace are also distinctly serrated.

Maximum size 55 mm.

Paratelphusa (Paratelphusa) sinensis
Edw. (Fig. 4).

Collection localities: Kamrup district: R. Pagladia near Uttarkuchi, 1 ♂, 1 ♀, TL. 13-15 mm; Darrang district: Proper Tezpur, 2 ♂,

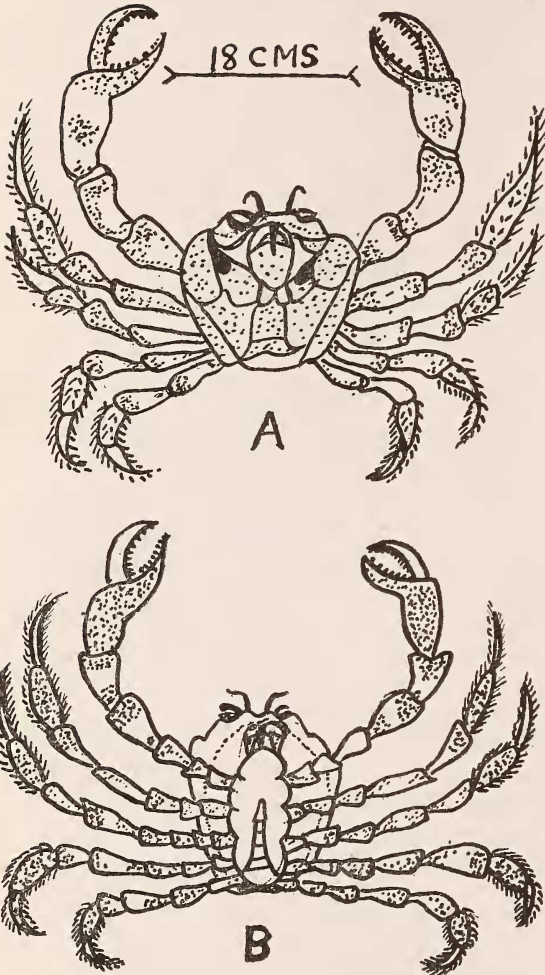


Fig. 1. *Paratelphusa (Barytelphusa) edentula* Alcock.
A. Dorsal side; B. Ventral side.

Maximum size 29 mm.

In Assam, the species has been so far recorded from Sibsagar district. The present collection extends its distribution to Goalpara, Kamrup, Lakhimpur and Dibrugarh districts.

CRABS FROM ASSAM

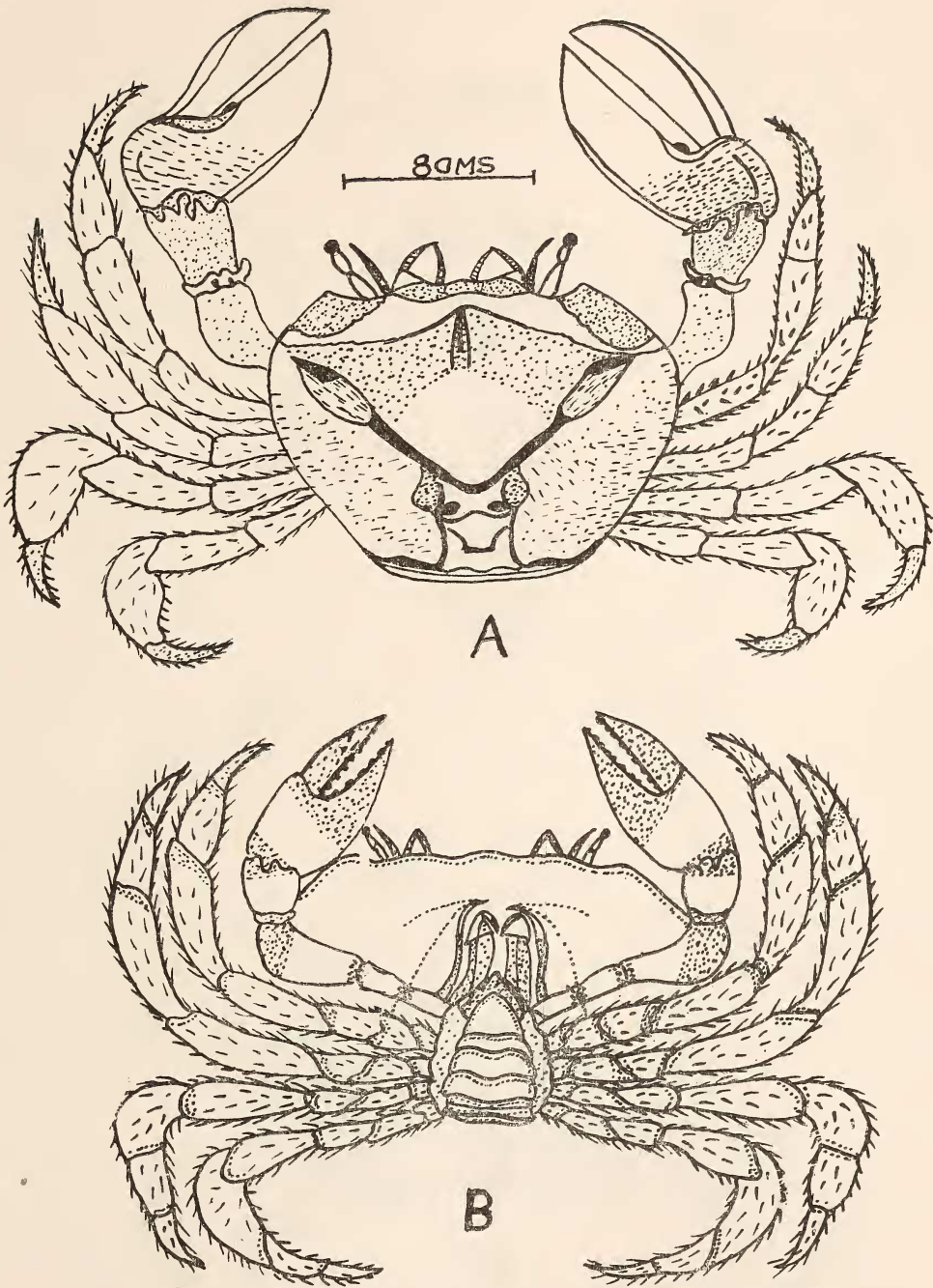


Fig. 2. *Paratelphusa* (*Barytelphusa*) *guerini* var. *planata* A.M.-Edw.
A. Dorsal side; B. Ventral side.

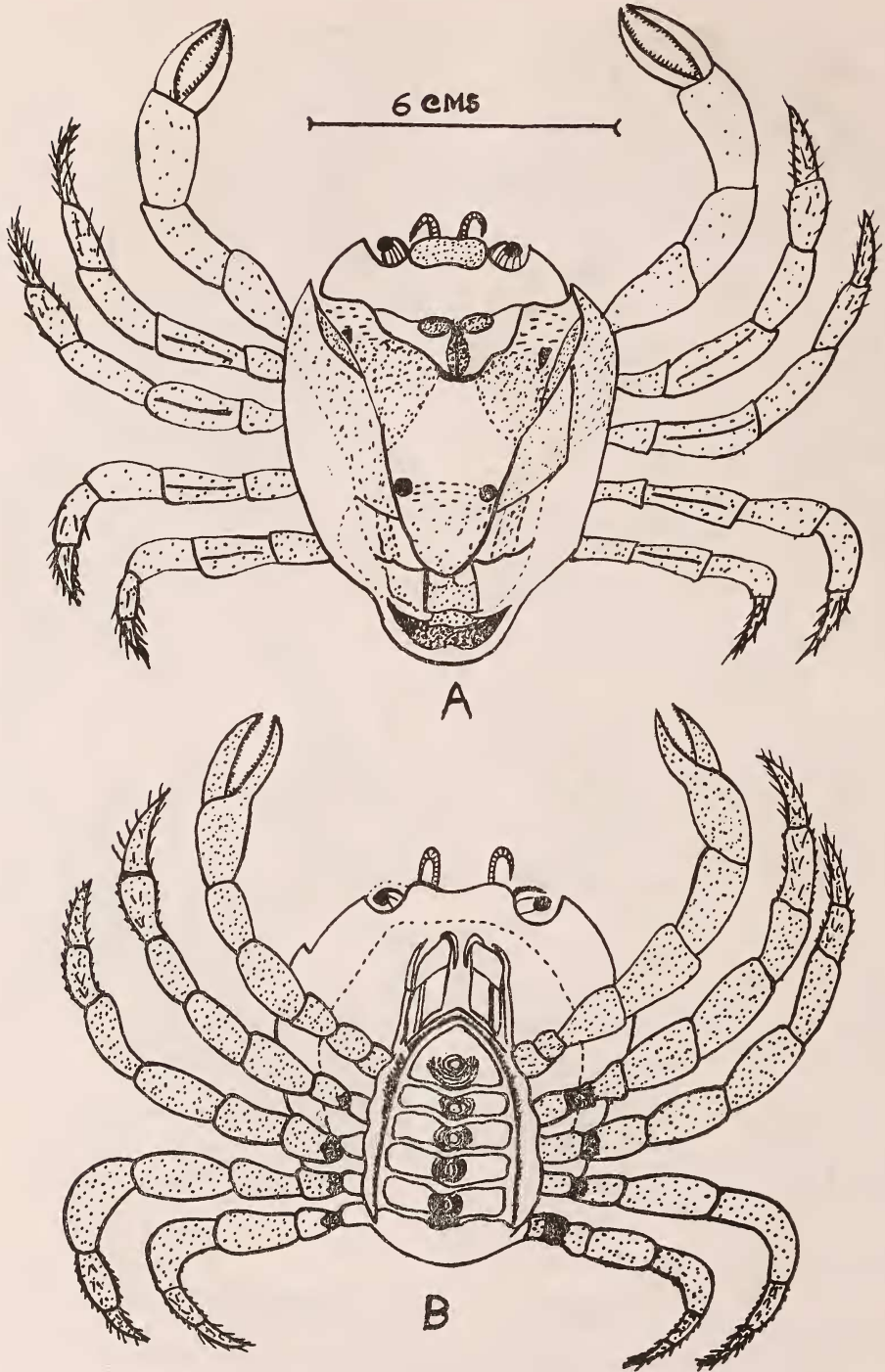


Fig. 3. *Paratelphusa (Barytelphusa) harpax* Alcock.
A. Dorsal side; B. Ventral side.

CRABS FROM ASSAM

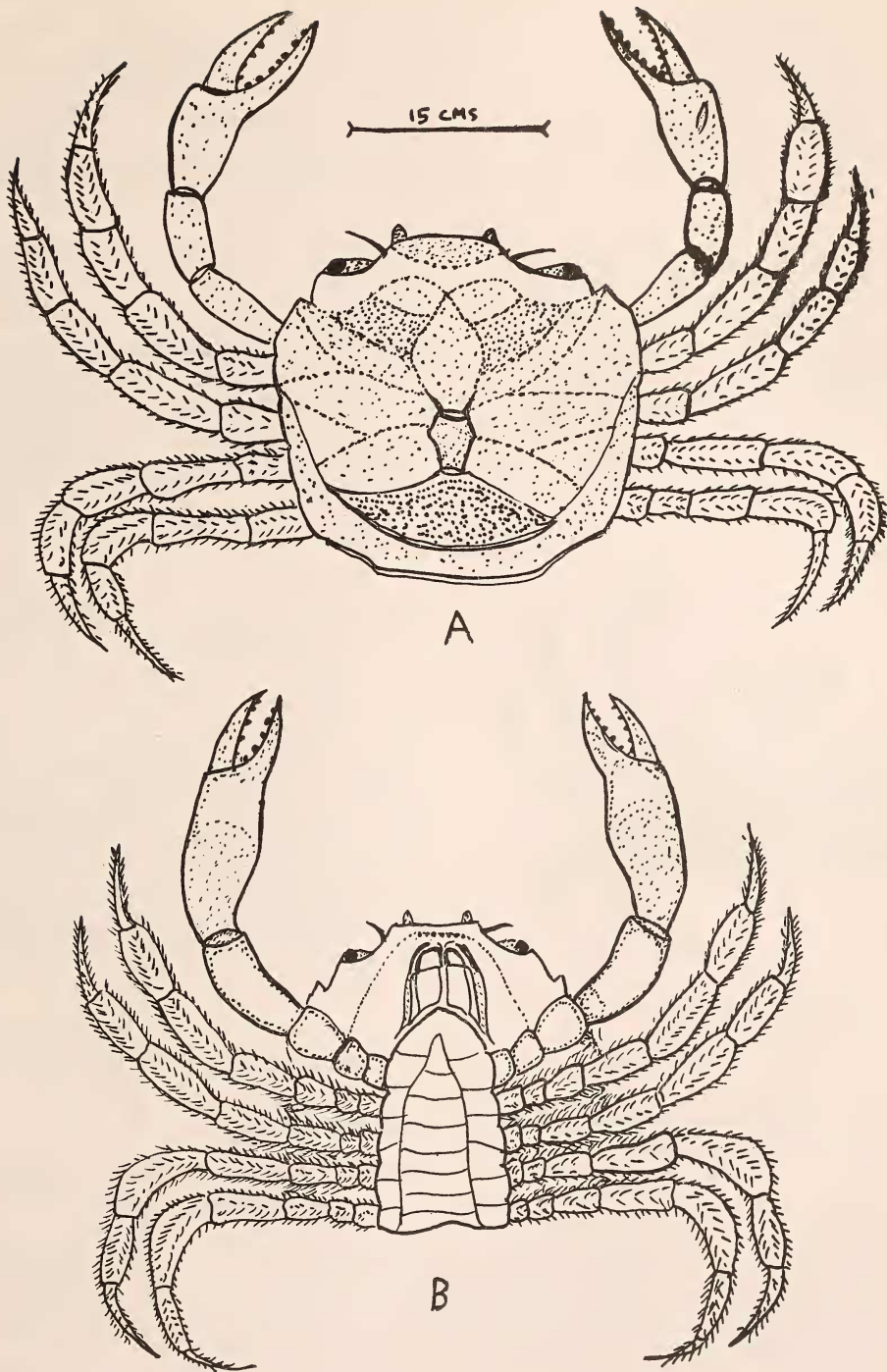


Fig. 4. *Paratelphusa (Paratelphusa) sinensis* Edw.
A. Dorsal side; B. Ventral side.

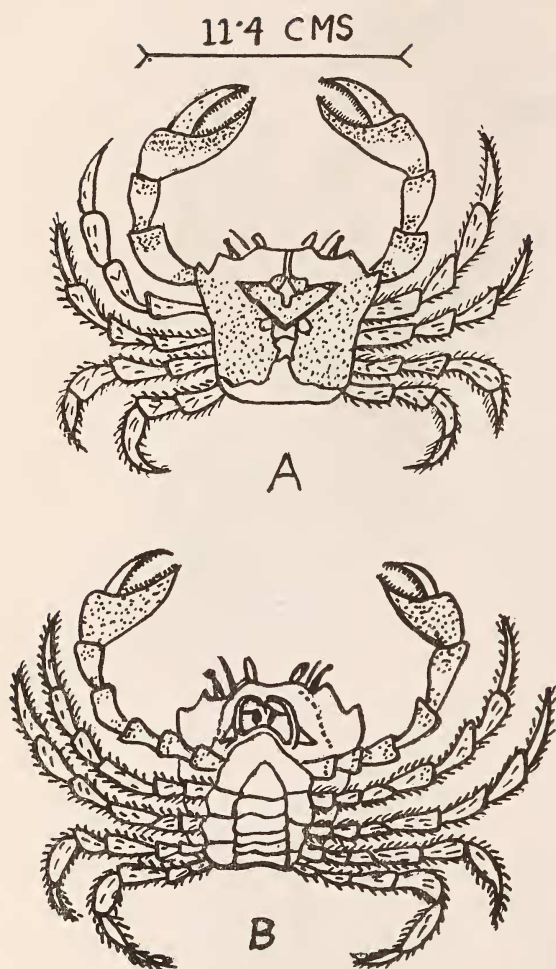


Fig. 5. *Paratelphusa (Paratelphusa) spinigera*
Woodmason.

A. Dorsal side; B. Ventral side.

2 ♀, TL. 16-20 mm; Karbi Anglong district:
Proper Diphu, 1 ♂, TL. 14 mm.

Diagnostic features:

The cervical groove is just visible but is very superficial and indistinctly represented by a line of irregular pits. The post-frontal mesogastric groove is indistinct. The epigastric

crests are slightly overlapping. The post orbital crests distinct and sharp at their inner edge and blunt behind the orbit.

Maximum size 15 mm.

Paratelphusa (Paratelphusa) spinigera,

Woodmason (Fig. 5).

Collection Localities: Goalpara district: Dipo, 2 ♂, 2 ♀, TL. 51-52 mm; Kamrup district: Kukurmara beel, Lankeswar dhum near Jalukbari. Boko, Bebejapara near Bozali, Bhulukmara beel near Nalbari, Sundubi beel, Golah beel near Amingaon, Durmari beel near Chetoli, Gogiakur near R. Saulkhua, Mongoldoi, Kahi Kuchi, R. Kulsi, 25 ♂, 6 ♀, TL. 55-57 mm; Nowgong district: Hapakati beel, Khetri near Jagiroad, R. Kolong, R. Kopili near Morigaon, 5 ♂, 2 ♀, TL. 45-50 mm; Karbi-Anglong district: R. Jamuna, 2 ♂, 1 ♀, TL. 35-45 mm; Cachar district: R. Karimganj, 3 ♂, 1 ♀, TL. 35-40 mm; Sibsagar district: Nawpukhuri beel, R. Namdang near Joysagar, Jorhat, Golaghat, Bokakhat, Gorisagar, Sunari, 5 ♂, 8 ♀, TL. 45-56 mm; Lakhimpur district: Pohumara near Singar, North Lakhimpur, 4 ♂, 4 ♀, TL. 35-42 mm; Dibrugarh district: 2 ♂, 1 ♀, TL. 31-40 mm.

Diagnostic features:

The deep cervical groove runs towards the outer end of the post-orbital crests, but becomes quite indistinct behind them. The epigastric crest is prominent but becomes indistinct beyond the point where the cervical groove approaches them.

Maximum size 57 mm.

Potamon (Acanthotelphusa) woodmasoni

Rathbun (Fig. 6).

Collection Localities: Kamrup district: Borpeta and Bozali, 2 ♂, TL. 32-33 mm. Sibsagar district: R. Namdang near Bahbariting, 4 ♂, 1 ♀, TL. 31-35 mm.

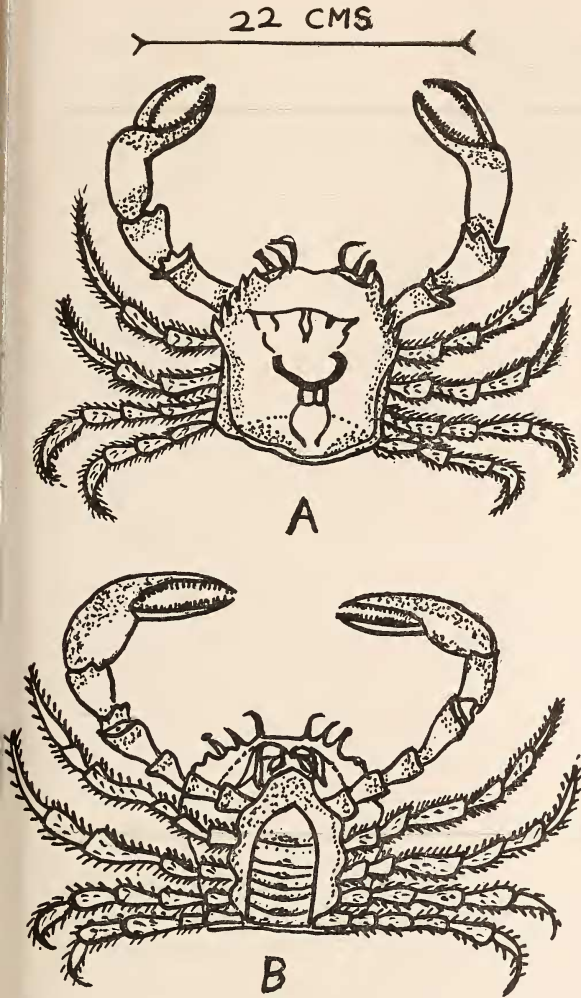


Fig. 6. *Potamon (Acanthotelphusa) woodmasoni* Rathbun.
A. Dorsal side; B. Ventral side.

Diagnostic features:

The cervical groove is deep, broad and superficial. The epigastric crests are rugulose and become indistinct beyond the points where they are met by the cervical groove.

Maximum size 33 mm.

Previous records show that only *Potamon (Acanthotelphusa) woodmasoni* Rathbun, *Paratelphusa (Barytelphusa) harpax* Alcock and *P. (Barytelphusa) edentula* Alcock were recorded from Assam (Sibsagar Dt.). The present records represent one species of the genus *Potamon* and five species of the genus *Paratelphusa* as the crab fauna of Assam. Out of the six species collected in the present study, *Paratelphusa (Barytelphusa) guerini* var. *planata* A.M. Edw., *Paratelphusa (Paratelphusa) sinensis* Edw., and *Paratelphusa (Paratelphusa) spinigera* Woodmason are new records for Assam. Besides, the distribution range of *Potamon (Acanthotelphusa) woodmasoni* Rathbun, *Paratelphusa (Barytelphusa) harpax* Alcock and *Paratelphusa (Barytelphusa) edentula* Alcock, which were known only from Sibsagar district have been reported from other districts of Assam. (Table 1).

The chelate leg of *Potamon (Acanthotelphusa) woodmasoni*, Rathbun, has been recorded as bearing 1 sub-terminal spine on the upper border of the merus and 1 strong spine at the inner angle of the carpus. In the present study 3 blunt and 1 pointed spines just above the merus-carpus joint were recorded.

In *Paratelphusa (Paratelphusa) sinensis* Edw., the presence of a sub-terminal spine on the upper border of the merus and a spine at the inner angle of the carpus of the chelate leg were known, but in the present record, it has been found that a pointed spine with tubercles and a blunt spine at the morus-carpus joint are only present.

In the chelate leg of *Paratelphusa (Paratelphusa) spinigera* Woodmason, only 1 distinct and acute spine on the merus was reported, but in the present collection specimens with the 4-edges of the merus serrated and provided

TABLE 1

DISTRIBUTION OF THE DECAPOD CRUSTACEANS STUDIED BELONGING TO THE GENERA *Potamon* AND *Paratelphusa* IN ASSAM

District	Goalpara	Kamrup	Darrang	Nowgong	Karbi- Anglong	Cachar	Sibsagar	Lakhim- pur	Dibru- garh
Species									
<i>Paratelphusa</i> (<i>Barytelphusa</i>) <i>edentula</i> Alcock	+	+	—	—	—	—	+	+	+
<i>Paratelphusa</i> (<i>Barytelphusa</i>) <i>guerini</i> var. <i>planata</i> A.M.-Edw.	—	+	+	—	+	—	—	—	—
<i>Paratelphusa</i> (<i>Barytelphusa</i>) <i>harpax</i> Alcock	—	—	—	—	—	—	+	+	+
<i>Paratelphusa</i> (<i>Paratelphusa</i>) <i>sinensis</i> Edw.	—	+	+	—	+	—	—	—	—
<i>Paratelphusa</i> (<i>Paratelphusa</i>) <i>spinigera</i> Woodmason	+	+	+	+	+	+	+	+	+
<i>Potamon</i> (<i>Acan- thotelphusa</i>) <i>woodmasoni</i> Rathbun	—	+	—	—	—	—	+	—	—

with 3 small and 2 large spines were also present.

In *Paratelphusa* (*Barytelphusa*) *guerini* var. *planata* A. M. Edw. the previous records had one epibranchial tooth on the antero-lateral borders of the carapace, but in the present collection the presence of 2 teeth with 11-12 small tooth-like projections in a serrated manner, was noted.

In *Paratelphusa* (*Barytelphusa*) *harpax* Al-

cock, the orbital border was known to contain only 1 distal tooth, but in the present collection the occurrence of 3-4 distinct teeth was noted as well as additional serrated structures.

In *Paratelphusa* (*Barytelphusa*) *edentula* Alcock, the antero-lateral borders of the carapace are reported to be well arched, distinct, but hardly crest-like, bluntly and feebly crenulate, but in the present collection the serrations are moderately crenulate, with crest and arched structures.

A KEY TO IDENTIFICATION OF THE SPECIES OF THE GENUS *Paratelphusa* AND *Potamon* STUDIED

The taxonomy of the fresh water crabs *Paratelphusa* & *Potamon* have been very confusing due to the great morphological plasticity of this groups showing considerable intra-specific variations over shadowing the genetic affinities between related species. Considering the practical difficulties encountered in the present study, a key is prepared and given below to identify all the collected species of *Paratelphusa* and *Potamon*.

Character	S	P	E	C	I	E	S	
	<i>Paratelphusa</i> (<i>Barytelphusa</i>) <i>edentula</i> Alcock.	<i>Paratelphusa</i> (<i>Barytelphusa</i>) <i>guerini</i> var. <i>planata</i> A.M. Edw.		<i>Paratelphusa</i> (<i>Barytelphusa</i>) <i>harpax</i> Alcock		<i>Paratelphusa</i> (<i>Paratelphusa</i>) <i>sinensis</i> Edw.	<i>Paratelphusa</i> (<i>Paratelphusa</i>) <i>spinigera</i> Woodmason	<i>Potamon</i> (<i>Acanthotelphusa</i>) <i>woodmasoni</i> Rathbun.
Carapace	The carapace is broad and convex.	The carapace is broad, deep and strongly convex.	The carapace is a little more convex, its length is $\frac{3}{4}$ th to $\frac{4}{5}$ th its greatest breadth and the surface is pitted.	The carapace is so broad, its length always more than $\frac{3}{4}$ th the greatest breadth.	The carapace is convex, its length is $\frac{3}{4}$ th to $\frac{4}{5}$ th its greatest breadth and the surface is pitted.	The carapace is fairly broad, convex with an uneven surface.	The carapace is fairly broad, convex with an uneven surface.	
Antero-lateral borders of carapace	The antero-lateral borders are well-arched.	It is well-defined and irregularly crenulate lateral epibranchial tooth.	The antero-lateral borders are less convex.	The antero-lateral borders are sharply curved, armed with three strong teeth exclusive of the orbital angle.	The antero-lateral borders are sharply curved, and indistinctly crenulate.	The antero-lateral borders of carapace cut into four cleft like spines.	The antero-lateral borders of carapace cut into four cleft like spines.	
Chelipeds	The chelipeds are sub-equal in the female, unequal but not immoderately so in the adult male.	The chelipeds are unequal in the male they are in the female.	In both male and female the chelipeds are similar in size.	The chelipeds are unequal, very much more so in the male than in the female.	The chelipeds are unequal in both sexes.	In the adult female the chelipeds are almost equal and are rather slender and shorter than the legs.	In the adult female the chelipeds are almost equal and are rather slender and shorter than the legs.	

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